

Mechanical Integrity Test Casing or Annulus Pressure Test for Well CO1516-02115

U.S. Environmental Protection Agency
Underground Injection Control Program, UIC Implementation Section, 8WM-DW
999 18th Street, Suite 500, Denver, CO 80202-2466
This form was printed on 08/08/1996.

EPA Witness: _____

Date 5/23/97

Test conducted by: Ken Merstelder

Others present: heroy Rangle

SUCKLA FARMS #1
SPINDLE
Wright's Disposal, Inc., Denver, CO

1X TA as of 06/16/1992
SENW 10 10N 67W
Op ID WRT02

Last MIT: Passed 07/09/1993
Max Allowed Press 3700 psig

Witnessed by EPA
1995 Max Reported Press 0 psig

Is this a regularly scheduled test? ☐ Yes ☒ No
Initial test for permit? ☐ Yes ☒ No
Test after well rework? ☒ Yes ☐ No

Well injecting during test? ☒ NO ☐ YES _____ BPD

Initial casing/tubing annulus pressure 0 psig
Does the annulus pressure build back up? ☒ Yes ☐ No

TUBING PRESSURE			
Initial	psig	psig	psig
End of Test	psig	psig	psig
CASING/TUBING ANNULUS PRESSURE			
Time	Test #1	Test #2	Test #3
0 min	1050 psig	psig	psig
5	1060		
10	1075		
15 min	1090		
20	1115		
25	1130		
30 min	1145		
		REVIEWED	
		BY: <u>Joe</u>	
		DATE: <u>6/3/97</u>	
Result (circle)	Pass	Fail	Pass
		Fail	Fail

WELL REWORK RECORD

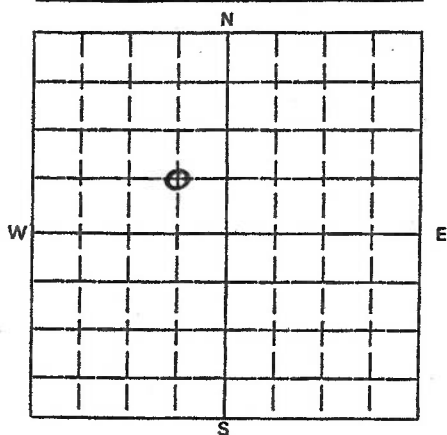
NAME AND ADDRESS OF PERMITTEE

WATTENBERG DISPOSAL, LLC
1675 BROADWAY, STE. 2800
DENVER, CO 80202

NAME AND ADDRESS OF CONTRACTOR

KP KAUFFMAN CO., INC.
1675 BROADWAY, STE. 2800
DENVER, CO 80202

LOCATE WELL AND OUTLINE UNIT ON
SECTION PLAT — 640 ACRES



STATE

CO

COUNTY

WELD

PERMIT NUMBER

CO1516-02115

SURFACE LOCATION DESCRIPTION

SE ¼ OF NW ¼ OF ¼ SECTION 10 TOWNSHIP 1N RANGE 67W

LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT

Surface Location 500 ft. from (N/S) — S Line of quarter section
and 2020 ft. from (E/W) — W Line of quarter section

WELL ACTIVITY

- ☒ Brine Disposal
☐ Enhanced Recovery
☐ Hydrocarbon Storage

Lease Name

SUCKLA FARMS
INJECTION WELL #1

Total Depth Before Rework

9571'

Total Depth After Rework

9571'

Date Rework Commenced

1-26-01

Date Rework Completed

1-31-01

TYPE OF PERMIT

- ☒ Individual
☐ Area
Number of Wells 1

Well Number

1

WELL CASING RECORD — BEFORE REWORK

Casing		Cement		Perforations		Acid or Fracture Treatment Record
Size	Depth	Sacks	Type	From	To	
8 5/8"	759'	200	"G"			1000 GAL 7 1/2 % HCL
5 1/2"	9557'	255	"G"	9276'	9418'	2000 GAL 15 % FE ACID, AUG. 19, 2000

WELL CASING RECORD — AFTER REWORK (Indicate Additions and Changes Only)

Casing		Cement		Perforations		Acid or Fracture Treatment Record
Size	Depth	Sacks	Type	From	To	

DESCRIBE REWORK OPERATIONS IN DETAIL

USE ADDITIONAL SHEETS IF NECESSARY

PULLED TBG & PACKER, LAID DOWN 5500' OF PLAIN TUBING.
ADDED 5500' OF FIBERLINE TUBING TO EXISTING 3500' OF
FIBERLINE TUBING. CIRCULATED PACKER FLUID, SET PACKER.
MIT CONDUCTED ON 2-1-01.

WIRE LINE LOGS, LIST EACH TYPE

Log Types

Logged Intervals

CERTIFICATION

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32).

NAME AND OFFICIAL TITLE (Please type or print)

RICK OHLEMEIER
COMPLETION SUP., KP KAUFFMAN CO.

SIGNATURE

DATE SIGNED

2-1-01

PRINTED IN U.S.A.

CHART CUBIC SET FOR
12 HR. CYCLE,
MOTOR RUN DOWN
R.C.

TEXAS
INSTRUMENTS, INC.

K. D. HARTMAN CO., INC.
ALPHENBERG, OREGON, LLC

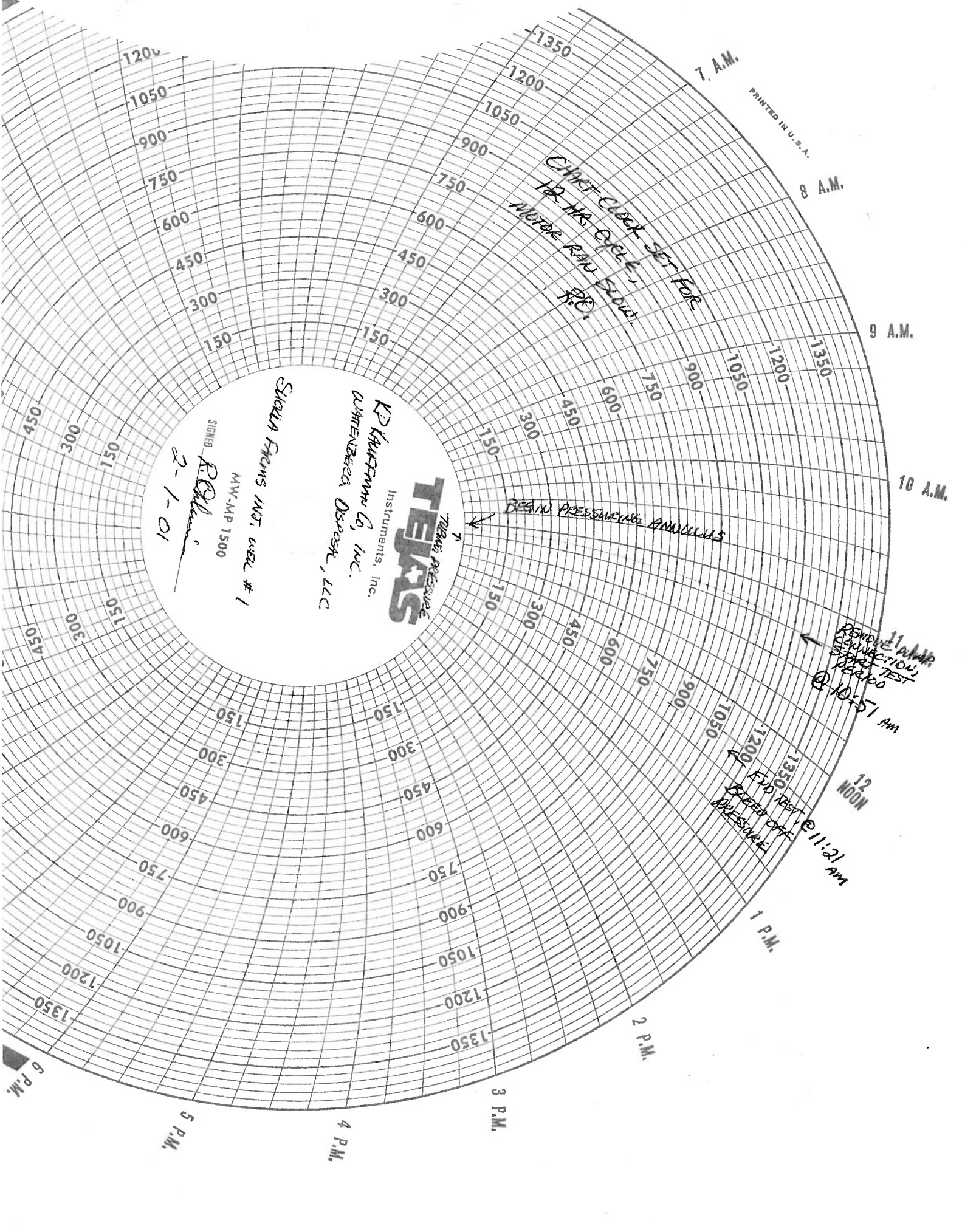
MM-MP 1500

SIGNED *A. D. Williams*
2-1-01

BEGIN PRESSURING ANNULUS

REMOVE 11 AM
RECONNECTION
START TEST
@ 10:51 AM

12 NOON
END TEST @ 11:21 AM
PRESSURE





WELL REWORK RECORD

C02115

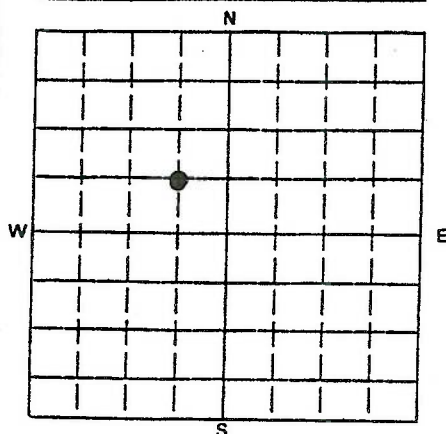
NAME AND ADDRESS OF PERMITTEE

WATTENBERG DISPOSAL, LLC
1675 BROADWAY, STE. 2800
DENVER, CO 80202

NAME AND ADDRESS OF TRACTOR

KAUFFMAN WELL SERVICE
10137 WCR 19
FT. LUTON, CO. 80621

LOCATE WELL AND OUTLINE UNIT ON SECTION PLAT — 640 ACRES



STATE

CO

COUNTY

WELD

PERMIT NUMBER

C01516-02115

SURFACE LOCATION DESCRIPTION

SE ¼ OF NW ¼ OF ¼ SECTION 10 TOWNSHIP 1N RANGE 67W

LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT

Surface Location 500 ft. from (N/S) S Line of quarter section
and 2020 ft. from (E/W) W Line of quarter section

WELL ACTIVITY

- ☒ Brine Disposal
☐ Enhanced Recovery
☐ Hydrocarbon Storage

Lease Name

Total Depth Before Rework

9571 FT.

Total Depth After Rework

9571 FT.

Date Rework Commenced

3-5-03

Date Rework Completed

3-15-03

TYPE OF PERMIT

- ☐ Individual
☐ Area

Number of Wells 1

Well Number

#1

WELL CASING RECORD — BEFORE REWORK

Casing		Cement		Perforations		Acid or Fracture Treatment Record
Size	Depth	Sacks	Type	From	To	
8 5/8"	759'	200	"G"	759'	SURFACE	INITIAL 1000 GAL 7 1/2% HCL TREATMENT
5 1/2"	9571'	255	"G"	9571'	8406'	2000 GAL 15% FE ACID, 8-19-2000
APR 15 2003						
Office of Enforcement Compliance & Environmental Justice						

WELL CASING RECORD — AFTER REWORK (Indicate Additions and Changes Only)

Casing		Cement		Perforations		Acid or Fracture Treatment Record
Size	Depth	Sacks	Type	From	To	
5 1/2"	9571'	75	STANDARD	5264'	5150'	SQUEEZED COLLAR LEAK
GREEN BLUE						
TAB 3						

DESCRIBE REWORK OPERATIONS IN DETAIL
USE ADDITIONAL SHEETS IF NECESSARY

SEE ADDITIONAL REPORTS

WIRE LINE LOGS, LIST EACH TYPE

Log Types

CBL, GR, CCL 3/13/03

Logged Intervals

5352' TO 5000'

CERTIFICATION

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32).

NAME AND OFFICIAL TITLE (Please type or print)

RICK OHLEMEIER
COMPLETION MANAGER

SIGNATURE

DATE SIGNED

3-17-03

KPK
K.P. Kauffman Co., Inc.
Daily Workover or Completion Report

SUPERVISOR: Rick Ohlemeier

Well: SUCKLA FARMS INJ. WELL #1

Road Dir: 19 at 10.5, .25E, N into

DATE: see below

L. Desc: senw 10-1n-67w

County: WELD, CO

Line Locate: n/a

Formation: Lyons

Perfs: 9276-9418 194 holes

Casing: 5.5" 20# N-80

TD: 9571

PBTD: 9476

KB Meas: 10

3/4/03 MI and park rig near loc. NFO at 2:30 pm. WO equip. gathering.

3/5/03 MIRU. MI KWS front end loader. Took delivery of 98 2-7/8" Fiberline tubing joints from ICO-Permian and unloaded on sills. Discontinue disposal injection, bled off pressure tubing and annulus, recovered 6 bo off annulus and have clean packer fluid below. NDWH, release packer, POH and stand back tubing. Pulled packer through tight spot w/61 jts out, depth of tight spot is calculated to be approx. 7088'. Continue pulling.
 (Current ops to 3 pm)

3/6/03 After 3 pm, 3/5: Pull total of 168 jts, SWI, NFO. Today: POH remaining tubing and packer. RIH w/5.5" casing scraper, bumper-sub, x-overs, 10 jts 2-3/8" tubing and 290 jts 2-7/8" tubing. Total string tally = 9432.14', ran to 9437' KB, (perfs from 9276 to 9418). POH and stand back tubing.
 (Current ops to 3 pm)

3/7/03 After 3 pm, 3/6: Recover all tools, SWI, NFO. Today: RIH w/redressed Arrowset I packer on 271 jts 2-7/8", hydrotesting packer and tubing to 6000 psi. Set at 8506' (cement top at 8406'), load and test annulus, pumped 10 bf at 3/4 bpm at 500 psi. during repeated testing. Release packer, pull and reset on 129 jts at 4041', annular test held 500 psi for 10 min. Release pkr, run and reset on 195 jts at 6105', annular test failed, pumping into at 3/4 bpm at 500 psi. SWI. NFO at 5:30 pm.

3/8/03 (During workover, Aug. of 2000, casing tight spot was reamed open w/tapered mill at 4925'. Pulled and set packer at 4854'.

Cont. testing:	Depth	Annular test	(Testing done at 500 psi.)
	4854'	Good	
	4979'	Good	(Reamed area tested good)
	5042'	Good	
	5542'	Fail	
	5291'	Fail	
	5167'	Good	
	5229'	Good	
	5261'	Good	Leak top interval below 5261'

POH tubing and pkr. RIH w/5.5" retrievable bridge plug (RBP) to 6200' and leave hanging for night. SWI.

3/9/03 RIH w/RBP. Set on 275 jts at 8630', (224' below cement top at 8406'). Pump and spot 2 sks sand on plug. POH tubing and retrieving head. RIH w/redressed 5.5" Arrowset I packer and set on 169 jts at 5292'. Test down tubing to 500 psi - good test. Pull and reset packer on 159 jts at 4979'. Test annulus to 500 psi, good test. Pump down tubing, establish rate of 1 bpm at 550 psi. for 10 min. No strong blow, no circulation out surf. csg. SD pump, release all pressure, SWI. Release crew at 3 pm.

3/10/03 Excavate circ. pit on loc. MI Halliburton for cement squeeze, establish pump rate through leak at 1.5 bpm and observe pressure increase to 1600 psi. Mix and pump 75 sks standard cement containing 3% kcl, .2% CFR-3, and .2% Halad-344. Density 15.6 lbs/gal, yield 1.18 cuft/sk. Displace cement with 30.5 bbl fresh water and squeeze to 2000 psi over next 1.5 hrs. Release packer and pull to 1100'. Reset packer and pressure tubing to 500 psi. SWI. Prep drilling equip. Release crew at 2 pm.

3/11/03 450 psi remains on tubing this morning. Release pressure, release packer, POH tubing and packer. RIH 4-3/4" 4-pronged blade bit, sub and tubing. Tag tight spot at 4925' with 157 jts. RU power swivel, reverse-circulate and rotate 20 min. w/no progress. RD swivel, POH tubing and tools. Took 4-3/4" 3-pronged blade bit to J&M Machine to be turned down to 4-5/8". Drain equip.

3/12/03 RIH with 4-5/8" 3-pronged blade bit, sub and tubing, tag cement with 161 jts + 5' next, at 5038'. RU power swivel, drill medium to hard cement to 169 jts, at 5278'. Run to 5310' and rev-circ clean. RD power swivel. Pack-off wellhead and test casing to 1000 psi for 30 min. Lost 80 psi by end of test. Release pressure, drain circ. equip. SWI. NFO.

KPK
K.P. Kauffman Co., Inc.
Daily Workover or Completion Report

SUPERVISOR: Rick Ohlemeier

Well: SUCKLA FARMS INJ. WELL #1

Road Dir: 19 at 10.5, .25E, N into

DATE: see below

L. Desc: senw 10-1n-67w

County: WELD, CO

Line Locate: n/a

Formation: Lyons

Perfs: 9276-9418 194 holes

Casing: 5.5" 20# N-80

TD: 9571

PBTD: 9476

KB Meas: 10

3/13/03 POH bit and tubing. MIRU ADI Wireline. Run GR, CBL per EPA specs across squeeze area. Good 85% bonding from collar leak at 5264' up-hole to 5198', with cement top at 5154'. Release ADI. RIH with RBP retrieving head, tag sand fill above RBP at 8618', reverse-circulate clean to plug, latch onto and retrieve, begin POH and laying down unlined 2-7/8" tubing. (Current ops to 3 pm.)

3/14/03 Finish POH, laying down tubing, recover RBP and retrieving head. SWI, NFO at 11 am. WO ICO Permian technician to arrive Sat. Will run fiberline tubing then.

3/15/03 Move in ICO Permian technicians. PICK up, tally, and redress each Fiberline tubing collar with new high temperature mastick. RIH Arrowset I (nickle-plated ID) packer, stainless steel profile nipple, and tubing. Torque each connection to 2750 ft lbs. Reverse-circulate 150 bbl fresh water treated with 20 gal. Halliburton AnHib II. Set packer and test casing to 500 psi. Packer is set and holding, but wellhead pack-off rubber leaking. Release pressure. SWI. NFO at 6:45 pm. Tubing detail: Bottom: 7.20' -- 2-3/8"x5.5" Arrowset I nickle-plated packer. Next: 0.80' -- 2-7/8"x2-3/8" profile nipple, stainless steel. Next: 9021.99' -- 284 jts 2-7/8" OD, EUE, 8rd, 6.5# N-80 Fiberglass-lined tubing. Packer set with 8 pts tension at 9040' KB.

3/16/03 No ops.

3/17/03 Replaced wellhead pack-off rubber and pre-tested annulus to 1000 psi. Released pressure. Install two pen recorder, conduct mechanical integrity test to 1020 psi for 30 minutes. Pressure dropped to 980 psi by end of test. Robert Carter, Halliburton Services, witnessed the test. RDMO Rig #2.

KPK
K.P. Kauffman Co., Inc.
Daily Workover or Completion Report

SUPERVISOR: Rick Ohlemeier

Well: Suckla Farms Injection Well #1

Road Dir: 19 at 10.5, 3/10E, N into

DATE: 3/15/03

L. Desc: senw 10 1n 67w

County: Weld, CO

Line Locate: n/a

Formation: Lyons

Perfs: 9276-9418, 194 holes

Casing: 5.5" 20# N-80

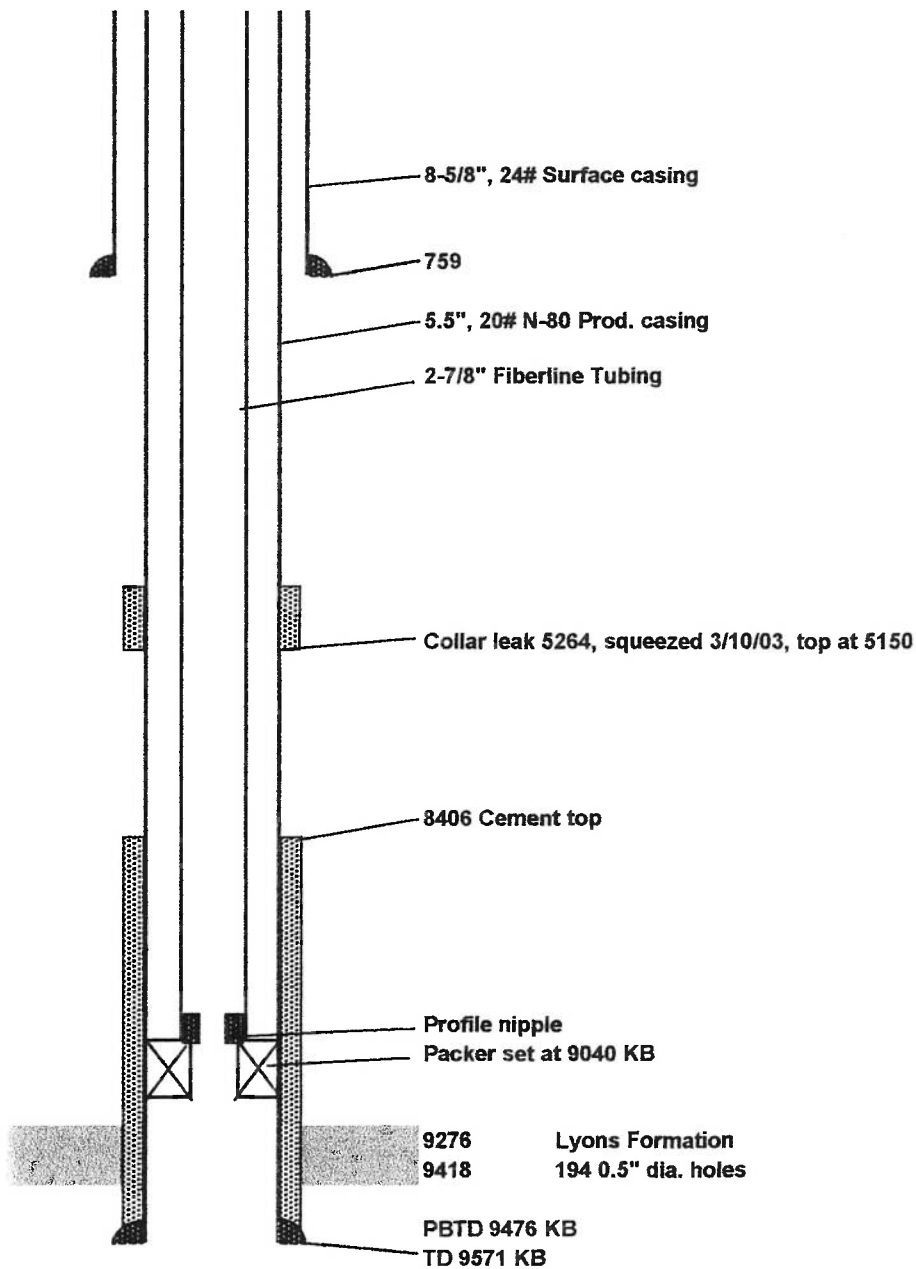
TD: 9571

PBTD: 9476

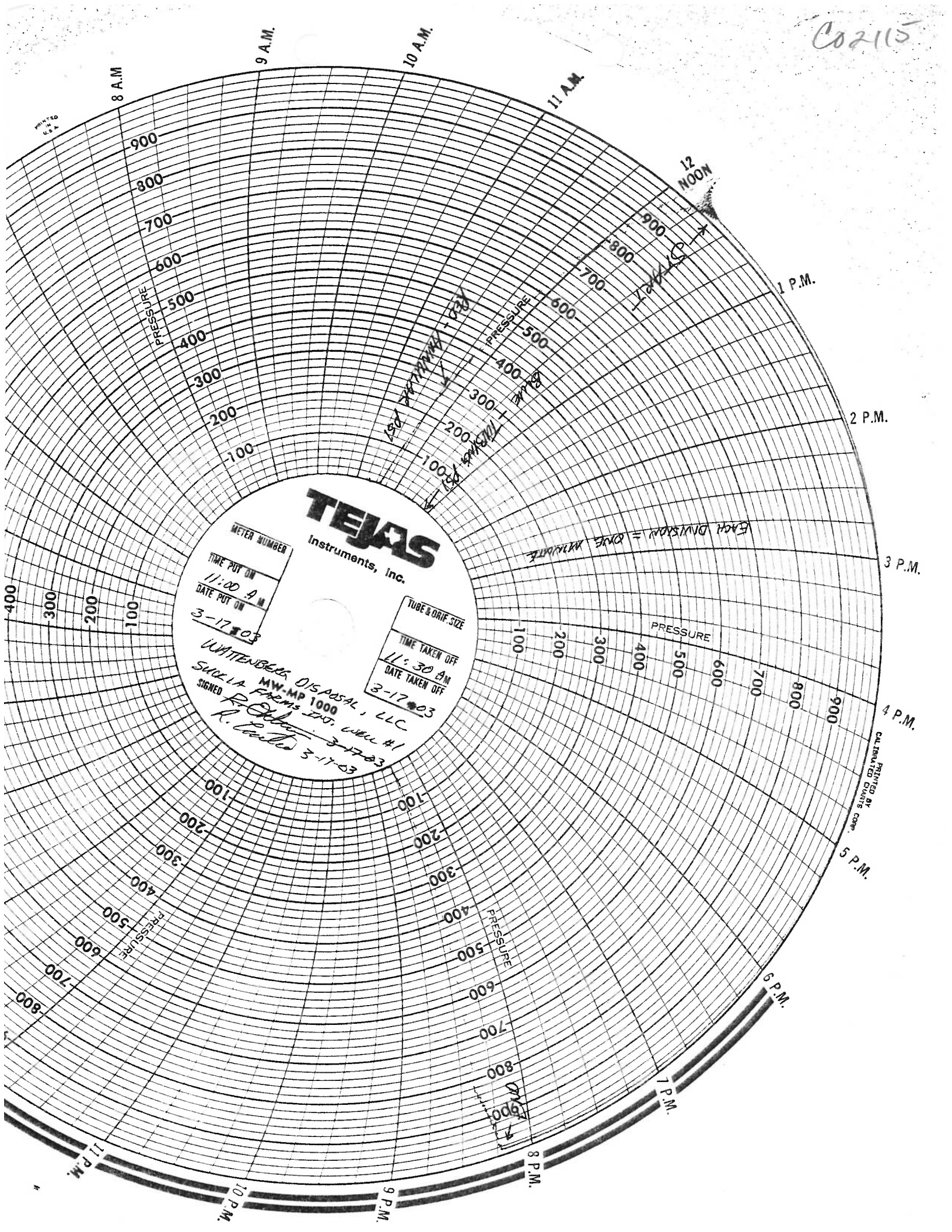
KB Meas: 10

Injection tubing detail:

<u>Footage</u>	<u>No. jts.</u>	
10.00	KB	Top of tubing under 10' KB meas.
9021.99	284	Tbg 2-7/8" OD, EUE, 8rd, 6.5#, N-80, Fiberglass-lined, 2.150" ID
0.80	1	2-7/8"x2-3/8", 3.668" OD, x-over profile nipple, stainless steel, 1.78" ID
7.20	1	2-3/8"x5.5" Arrowset I packer, set in tension, elements at 9036.60' KB
9039.99		TOTAL, Set at 9040' KB



C02115



KPK
K.P. Kauffman Co., Inc.
Daily Workover or Completion Report

SUPERVISOR: Rick Ohlmeier

Well: Suckla Farms Injection Well #1

Road Dir: 19 at 10.5, 3/10E, N into

DATE: 1/17/03

L. Desc: senw 10 1n 67w

County: Weld, CO

Line Locate: n/a

Formation: Lyons

Perfs: 9276-9418, 194 holes

Casing: 5.5" 20# N-80

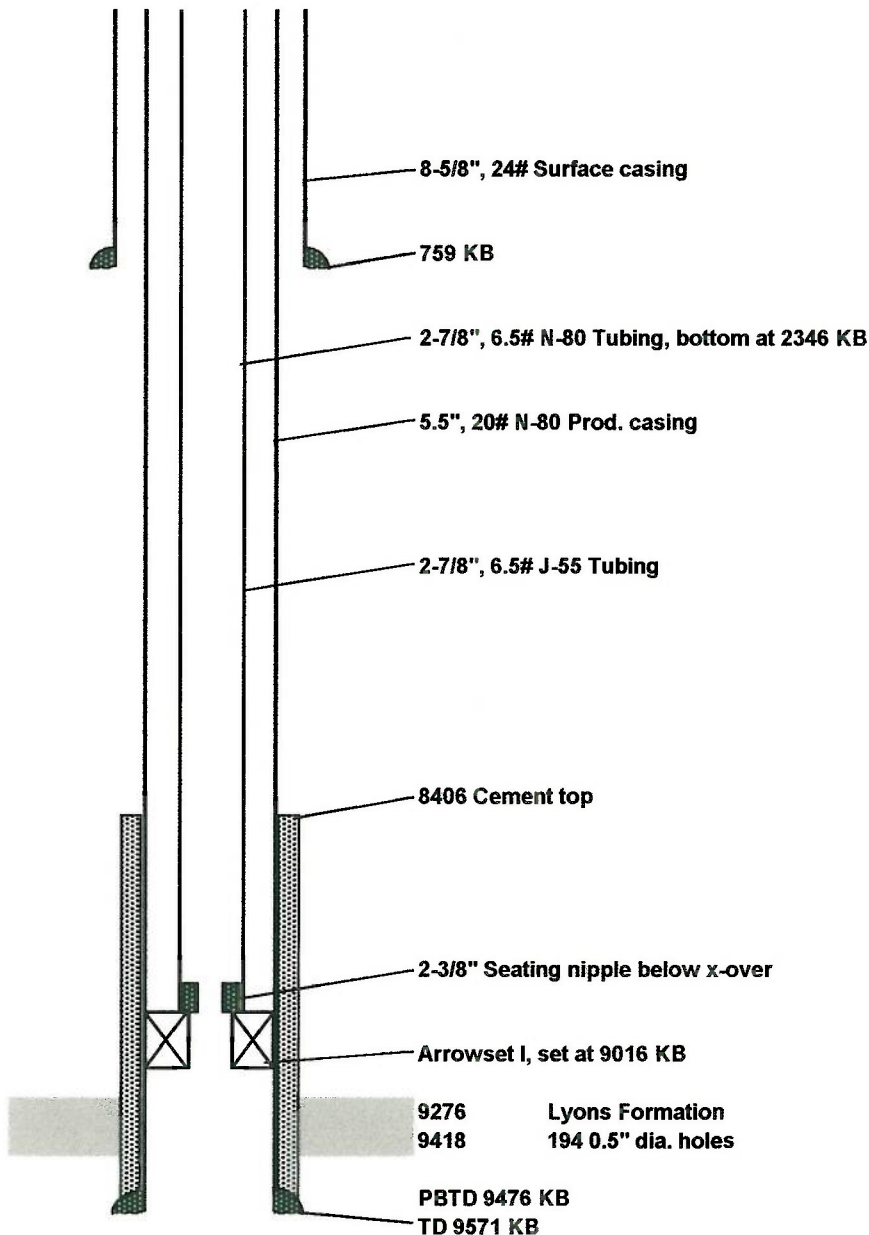
TD: 9571

PBTD: 9476

KB Meas: 10

Tubing Detail, 1/16/03:

<u>Footage</u>	<u>No. its.</u>	
7.00	KB	Top of tubing 7' under 10' KB meas.
2339.03	74	Tbg 2-7/8" OD, EUE, 8rd, 6.5#, N-80, yellow banded
6659.21	213	Tbg 2-7/8" OD, EUE, 8rd, 6.5#, J-55
1.7	1	2-3/8"x2-7/8" x-over
1.1	1	Seating nipple, 2-3/8"
7.8	1	2-3/8"x5.5" Arrowset I packer, set in compression, elements at 9013' KB
9015.84		TOTAL, Set at 9016' KB



RECEIVED
 JAN 21 2003
 Office of Environment & Compliance, 2100 Environmental Building

KPK
K.P. Kauffman Co., Inc.
Daily Workover or Completion Report

SUPERVISOR: Rick Ohlemeier

Well: SUCKLA FARMS INJ. WELL #1

Road Dir: 19 at 10.5, .25E, N into

DATE:

L. Desc: senw 10-1n-67w

County: WELD, CO

Line Locate: n/a

Formation: Lyons

Perfs: 9276-9418 194 holes

Casing: 5.5" 20# N-80

TD: 9571

PBTD: 9476

KB Meas: 10

- 1/10/03 History: Lightning Wireline placed pressure recording bombs at SN (9106') on 1/8/03. On 1/9/03, contracted engineer attempted to begin step-rate test, but pumps pressured-out to 1200 psi. Wireline operator unable to retrieve tools due to 10' of trash and sediment which had settled on tool overnight. MIRU rig late on 1/9/03. Today: RIH with turned-down swab cups (2.025" dia.), well swabbed down to 7000' in three hrs, recovered 40 bf. Wireline operator attempted to retrieve, but stacked on plug in tubing at 8345' (661' above SN). Scheduled Maverick Coil-Tubing unit for 1/11/03, 7:00 a.m.
- 1/11/03 MIRU Maverick Coil-Tubing Services. RIH with 1.25" jet nozzle on 1.25" tubing, circulate to and stack-out on obstruction at 8326'. Repeatedly set 3000 lbs on obstruction with no further progress. Circ. clean for 45 min. POH coil tbg. MIRU Lightning Wireline. Operator RIH with impression block and stacked on obstruction at 8340' (wireline meas.), POH. Impression block has no conclusive markings. Operator does not want to attempt running retrieving head. Release all svcs.
- 1/12/03 Crew thawed wellhead, ice and air problems w/ rig, NDWH. Release packer, swab tubing down to 6000'. POH tbg. Pulled wet tubing from jts #250 to 263. Laid down jt #263 containing wireline tool assembly and scale. POH and recover x-over, SN, and packer -- no tools in SN. Attempt to hammer-out tools from jt #263 w/no success. SWI at 3:30 pm. NFO.
- 1/13/03 KWS roustabouts cut wireline tools from jt #263. Prep to run tubing and packer, WO wind to die. Move in Lightning Wireline, RIH with sinker bar in open casing, tag casing fill at 9442' KB, 24' below bottom perf at 9418'. PBTD at 9476'. Casing fill found on 7/15/98 at 9453' KB. Release rig crew due to high winds at 1:30 pm.
- 1/14/03 Install new tubing head, RIH N-80 Fiberline tubing, POH and lay down. Estimate 80% of collars have fiberglass lining torn out. (Current ops to 3 pm)
- 1/15/03 Lay down remainder of fiberline tubing (48 jts). RU H-S Testing, pick up singles and RIH used, 2-7/8" J-55, 6.5# tubing and test to 7000 psi. 135 jts in by 3pm, SD due to high wind. NFO.
- 1/16/03 Tally, pick up, hydrotest, and run remaining J-55 tubing, move in N-80 tubing. Tally, pick up, hydrotest and run 74 jts 2-7/8" N-80. Reverse-circulate 140 bbl fresh water treated with 20 gal Halliburton Anhib II. Set packer, load and test annulus to 500 psi for 15 min. Good test. Release pressure. Hook up 2 pen recorder and conduct MIT pre-test to 950 psi. Release pressure. Drain pump and pressure lines at 5 pm, wait on third party witness (Andy Peterson) to arrive loc. At 5:55 pm, hook up lines and pump into annulus to 940 psi. Isolate annulus from pump, observe pressure chart from 6:01 pm to 6:31 pm, release annular pressure to zero, but chart remained at full pressure due to test line freeze. SWI. Drain all equip. Release crews. NFO. Annulus will pass MIT, but pressure chart will not. Will re-test tomorrow.
- New tubing detail: Top: 74 jts 2-7/8" OD, EUE, 8rd, 6.5#, N-80 yellow banded tubing--2339.03'. Next: 213 jts 2-7/8" OD, EUE, 8rd, 6.5# J-55 used tubing--6659.21'. Next: 2-7/8"x2-3/8" x-over--1.7'. Next: 2-3/8" pump seating nipple--1.1'. Next: 2-3/8"x5.5" Arrowset I packer--7.8'. Set 3' under 10' KB, packer is in 18 pts compression at 9011.84' KB.
- 1/17/03 MIT reconducted in the presence of Louis Gibson, Gibson Enterprises, from 9:55 am to 10:35 am. SWI. NFO.

RECEIVED
JAN 21 2003
Office of Environment
Completion & Enforcement